

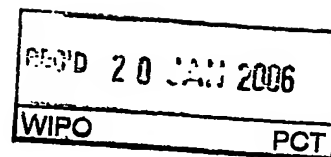
# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference TY-F03025-00	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/JP2004/015105	International filing date (day/month/year) 06.10.2004	Priority date (day/month/year) 07.10.2003	
International Patent Classification (IPC) or national classification and IPC B60K15/067, B60K15/07			
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA et al.			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 4 sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I      Basis of the opinion <input type="checkbox"/> Box No. II     Priority <input type="checkbox"/> Box No. III    Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV    Lack of unity of invention <input checked="" type="checkbox"/> Box No. V     Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI    Certain documents cited <input checked="" type="checkbox"/> Box No. VII    Certain defects in the international application <input type="checkbox"/> Box No. VIII   Certain observations on the international application			
Date of submission of the demand  05.08.2005	Date of completion of this report  17.01.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Authorized Officer  Tamme, H-M  Telephone No. +49 30 25901-542		



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/JP2004/015105

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1, 3-11	as originally filed
2	received on 08.08.2005 with letter of 04.08.2005

**Claims, Numbers**

2-12	received on 08.08.2005 with letter of 04.08.2005
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**Drawings, Sheets**

1/9-9/9	as originally filed
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- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/JP2004/015105

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	2-12
	No: Claims	
Inventive step (IS)	Yes: Claims	2-12
	No: Claims	
Industrial applicability (IA)	Yes: Claims	2-12
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

- 1 Reference is made to the following document:  
D1: EP 1225076 A

2 **Novelty:**

With respect to claim 2, D1 discloses a fuel tank supporting structure in which a plurality of fuel tanks (claim 1) are disposed in parallel, comprising fuel tank guiding means (6,7) for, in case in which load of a predetermined value or more is applied to the fuel tanks, guiding movement of at least one fuel tank (5) downward in a vertical direction of a vehicle body (figure 2) wherein the fuel tank guiding means includes movement preventing means for preventing upward movement of the fuel tank (5) (paragraph 0015), and a weak portion (7) formed at a fuel tank supporting bracket (column 2, line 39) and the weak portion breaks in a case in which a load of a predetermined value or more is applied (column 2, line 40).

The subject-matter of claim 2 differs from D1 in that the support bracket (62) is disposed beneath the fuel tank (56).

Thus, the subject-matter of claim 2 is new and satisfies the criterion set forth in Article 33(2) PCT.

Since dependent claims 3 to 12 contain additional features the subject-matter of claims 3 to 12 is also new.

3 **Inventive step:**

The problem to be solved by the present invention may be regarded as simplifying the attachment of the fuel tanks.

D1 is silent about how the fuel tanks are attached but it is clear from the drawings that they are fixed by brackets on each side of the tanks. For solving above problem no indication can be found in the yet available prior art to provide the brackets beneath the fuel tanks.

Therefore, the subject-matter of claim 2 is considered to satisfy the criterion set forth in Article 33(3) PCT. Since dependent claims 3 to 12 contain additional features, they fulfill the requirements accordingly.

**Re Item VII**

**Certain defects in the international application**

- 1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

In view of the above-described circumstances, an object of the present invention is to provide a fuel tank supporting structure which can reduce the load which is applied to fuel tanks at the time of a collision.

In order to achieve the above-described object, in accordance with one aspect of the present invention, there is provided a fuel tank supporting structure in which a plurality of fuel tanks are disposed in parallel, comprising fuel tank guiding means for, in a case in which a load of a predetermined value or more is applied to the fuel tanks, guiding movement of at least one fuel tank that is adjacent to a vehicle body outermost fuel tank downward in a vertical direction of a vehicle body.

Preferably, the fuel tank guiding means includes movement preventing means for preventing upward movement of the fuel tank, and a weak portion formed at a fuel tank supporting bracket which is disposed beneath the fuel tank, and the weak portion breaks in a case in which a load of a predetermined value or more is applied. Preferably, the weak portion is cut-out formed portions of the fuel tank supporting bracket. Preferably, the fuel tank supporting bracket includes a first bracket, a second bracket, and a connecting portion connecting the both brackets, and the weak portion is the connecting portion. Preferably, the weak portion is a thin-walled portion of the fuel tank supporting bracket. Preferably, the fuel tank guiding means includes movement preventing means for preventing upward movement of the fuel tank, and inclined portions formed at opposing surfaces of adjacent fuel tanks. Preferably, the fuel tank supporting structure is set such that fuel can be successively used from a vehicle body outer side fuel tank. Preferably, the fuel tank supporting structure comprises vehicle body left and right rockers, wherein, between the rockers, the fuel tanks are disposed so as to respectively extend in a vehicle transverse direction. Preferably, the fuel tank supporting structure comprises falling-out preventing means for preventing the fuel tank from completely falling-out toward a bottom of the vehicle body. Preferably, the falling-out preventing means includes a sub frame disposed so

## CLAIMS

1. (Cancelled)

2. (Amended) A fuel tank supporting structure in which a plurality of fuel tanks (52, 54, 56) are disposed in parallel, comprising fuel tank guiding means for, in a case in which a load of a predetermined value or more is applied to the fuel tanks (52, 54, 56), guiding movement of at least one fuel tank (54) that is adjacent to a vehicle body outermost fuel tank (56) downward in a vertical direction of a vehicle body,

wherein the fuel tank guiding means includes movement preventing means (20) for preventing upward movement of the fuel tank (56), and a weak portion formed at a fuel tank supporting bracket (62) which is disposed beneath the fuel tank (54), and

the weak portion breaks in a case in which a load of a predetermined value or more is applied.

3. The fuel tank supporting structure of claim 2, wherein the weak portion is cut-out formed portions (72, 74) of the fuel tank supporting bracket (62).

4. The fuel tank supporting structure of claim 2, wherein the fuel tank supporting bracket (62) includes a first bracket (76), a second bracket (78), and a connecting portion (84) connecting the both brackets (76, 78), and

the weak portion is the connecting portion (84).

5. The fuel tank supporting structure of claim 2, wherein the weak portion is a thin-walled portion of the fuel tank supporting bracket (62).

6. (Amended) The fuel tank supporting structure of claim 2, wherein the fuel tank guiding means includes movement preventing means (20) for preventing upward movement of the fuel tank (56), and inclined portions (86, 88) formed at opposing surfaces of adjacent fuel tanks.
7. (Amended) The fuel tank supporting structure of claim 2, wherein the fuel tank supporting structure is set such that fuel can be successively used from a vehicle body outer side fuel tank (56).
8. (Amended) The fuel tank supporting structure of claim 2, comprising vehicle body left and right rockers (14, 14), wherein, between the rockers (14, 14), the fuel tanks (52, 54, 56) are disposed so as to respectively extend in a vehicle transverse direction.
9. (Amended) The fuel tank supporting structure of claim 2, comprising falling-out preventing means for preventing the fuel tank (54) from completely falling-out toward a bottom of the vehicle body.
10. The fuel tank supporting structure of claim 9, wherein the falling-out preventing means includes a sub frame (40) disposed so as to be separated from the fuel tank (54) toward a lower side of the fuel tank (54), and when the fuel tank (54) moves downward, the sub frame (40) catches on the fuel tank (54) and can prevent the fuel tank (54) from falling-out.
11. The fuel tank supporting structure of claim 10, wherein the sub frame (40) includes at least two cross rails (46, 48) which are disposed at the lower side of the fuel tank (54) so as



to respectively extend in a vehicle transverse direction, and

a vehicle longitudinal direction dimension between the cross rails (46, 48) is smaller than a diameter of the fuel tank (54).

12. (New) The fuel tank supporting structure of claim 2, wherein the vehicle body outermost fuel tank (56) is disposed upwardly offset from at least the fuel tank (54) adjacent thereto.